

Claims

1. Use in medicine of a compound which is capable of blocking the interaction of phosphorylase *a* with the glycogen-targeting subunit ( $G_L$ ) of protein phosphatase 1.
2. Use as claimed in Claim 1 wherein the compound is for use in the manufacture of a medicament for use in the treatment of a disorder associated with higher than normal blood glucose levels.
3. Use as claimed in Claim 2 wherein the disorder is selected from type I and/or type II diabetes.
4. Use in medicine as claimed in Claim 1 wherein the compound is a polypeptide comprising the 16 mer amino acid sequence PEWPSYLGYEKLYPYY, or a fragment or variant thereof which is capable of binding phosphorylase *a*.
5. Use as claimed in Claim 4 wherein the polypeptide increases the activity of hepatic glycogen synthase.
6. A pharmaceutical composition comprising an inhibitor compound which is capable of blocking the interaction of phosphorylase *a* with the glycogen - targeting subunit ( $G_L$ ) of protein phosphatase 1, together with a pharmaceutically acceptable excipient or carrier.
7. A pharmaceutical composition as claimed in Claim 6 wherein the inhibitor compound comprises a polypeptide having the 16 mer amino acid

sequence PEWPSYLGYEKLYPYY, or a fragment or variant thereof which is capable of binding phosphorylase  $\alpha$ .

8. A pharmaceutical composition as claimed in Claim 6 wherein the polypeptide consists of a truncated version of the glycogen-targeting subunit of protein phosphatase 1.

9. A method of identifying an inhibitor compound which is capable of blocking the interaction of phosphorylase  $\alpha$  with the glycogen-targeting subunit of protein phosphatase 1 comprising;  
providing a polypeptide comprising the 16 mer amino acid sequence PEWPSYLGYEKLYPYY, or fragment or variant thereof which binds phosphorylase  $\alpha$ ;  
providing a test compound; and  
comparing the binding of the polypeptide by phosphorylase  $\alpha$  in the presence or absence of the test compound; an inhibitor being identified by reduced binding in the presence of the test compound.

10. A method as claimed in Claim 9 wherein the phosphorylase  $\alpha$  is labelled and the binding of phosphorylase  $\alpha$  to the polypeptide is determined by measuring the amount of label.

11. A method as claimed in Claim 10 wherein phosphorylase  $\alpha$  is labelled with a label selected from digoxigenin and  $^{32}\text{P}$  or  $^{33}\text{P}$ .

12. A compound which is identifiable by the method of any one of Claims 9 to 11.

13. A method of reducing the blood glucose level of a mammalian animal comprising administering a therapeutically effective amount of an inhibitor compound as defined in any one of Claims 1 to 12.

14. A method as claimed in Claim 13 wherein the mammalian animal is a human.

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